cont'd A4

frequencies at which the value of μ" is 50% of the maximum $\mu"_{max}$ and normalizing the frequency bandwidth at the center frequency thereof.

REMARKS

Entry of the foregoing amendments, and reexamination and reconsideration of the subject application, pursuant to and consistent with 37 C.F.R. § 1.104 and § 1.112, and in light of the following remarks, are respectfully requested.

Rejection under 35 U.S.C. 112

The amendment to claim 19, from which claim 31 depends, is believed to obviate the rejection of claim 31 under this section of the statute.

Art Rejections

Prior to addressing the art rejections, Applicants would reiterate that their aplication includes as an object providing a wiring board having a magnetic thin film of a magnetic loss material, such as a granular magnetic film, effective in countering spurious radiation from semiconductor devices and electronic circuits. Another object is to provide a wiring board comprising a magnetic thin film of a magnetic loss material, such as a granular magnetic thin film, that exhibits a large magnetic loss factor where effective measures against spurious radiation can be implemented with a magnetic body of smaller volume. To attain these objects, the wiring boards of the present invention have a magnetic thin film made from a magnetic loss material, such material having a maximum value $\mu"_{max}$ of loss factor μ"; the loss factor is an imaginary component in the complex permeability characteristic of the magnetic loss material. The maximumvalue $\mu"_{max}$ exists in the frequency range of 100 MHz to 10 GHz.

As amended, claim 1 describes that this particular magnetic thin film is formed on a conductor pattern.

As amended, claim 19 recites that this particular magnetic thin film is disposed on at least one part of the board.

More particularly, the wiring board of the present invention has a magnetic thin film formed of a magnetic loss material on a conductor pattern or on at least one part of a board. The magnetic loss material is not used for producing magnetic fields, but rather is used for suppressing electromagnetic interference of the conductor pattern, thus acting as a noise absorber absorbing undesirable electromagnetic waves. The undesirable electromagnietic wave is composed of high harmonic components laid on an electric signal conducted through the conductor pattern.

Rejection under 35 U.S.C. 102

Claims 1-2, 6, 9, 22-24, 26, 28, and 31 stand rejected hereunder as anticipated by Katsumi, which rejection is respectfully traversed.

Katsumi discloses a recording electrode using a magnetic head. In this reference, the magnetic head has an electrode made from a conductive magnetic sheet, which produces magnetic fields because of current applied thereto in order to capture toner to form a printed pattern.

A magnetic material having a high magnetic loss would defeat the purpose of Katsumi. In contrast, the present invention is directed to magnetic layers that suppress electromagnetic interference. Use of such a material by Katsumi would be expected to result in a worse image, contrary to Katsumi's intent. Further, Katsumi provides no description of the magnetic loss characteristics (μ''_{max} at 100 MHz to 10 GHz) which are important to the present invention. Therefore,

claims 1 and 19 are not anticipated by Katsumi, and so the claims depending therefrom are not anticipated, so the rejection should now be withdrawn.

Rejection under 35 U.S.C. 103

Claims 4-5, 7, and 27 stand rejected as obvious over the combination of Katsumi and Murata, which rejection is respectfully traversed.

As noted above, Katsumi completely fails to appreciate the suppressing effect of the magnetic loss material of this invention and the characteristics recited for that material.

Murata only discloses a flexible substrate with a conductor pattern, and thus fails to overcome the deficiencies in Katsumi.

Moreover, it would not have been obvious to combine the references because Katsumi's desire to obtain a high quality image would be compromised by a substrate having flexibility. Note that Katsumi discloses an alumina substrate. The use of a flexible substrate would be expected to result in a substrate where some areas move with respect to other areas, thereby denigrating the image quality. Accordingly, the combination of references actually is contrary to the intent and purpose of the primary reference, whereby the combination is not warranted because the references teach away from each other.

Conclusion

In light of the foregoing amendments and remarks, entry of the amendments, withdrawal of the rejections, and further and favorable action, in the form of a Notice of Allowance, is believed to be next in order, and such actions are earnestly solicited.

Petition for Extension of Time

Pursuant to the provisions of 37 CFR 1.136(a), Applicants hereby petition for a two month extension of time to 24 October 2002 in order to respond to the Office Action dated 24 May 2002. A check in the amount of $ 400.00 is attached. If this paper should necessitate any fees under 37 C.F.R. § 1.16 or § 1.17 not provided, or if there has been an overpayment, please debit or credit as necessary the Deposit Account No. 502144.

Respectfully submitted,

Bradley N. Ruben

Bradley N. Ruben, Reg. No. 32,058
Bradley N. Ruben, PC
463 First St., Suite 5A
Hoboken, NJ 07030-1859
201-239-0707 (fax -0734)
mail@rubenpatent.com

22 October 2002

CERTIFICATE OF MAILING OR TRANSMISSION – 37 CFR 1.8

I hereby certify that I have a reasonable basis that this paper, along with any referred to above, (i) are being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to Commissioner of Patents and Trademarks, Washington, D.C. 20231, or (ii) are being transmitted to the U.S. Patent & Trademark Office in accordance with 37 CFR § 1.6(d).

DATE: October 22, 2002

NAME: H. McLennand

SIGNATURE: H McLennand

APPENDIX SHOWING MARK-UPS OF AMENDMENTS

1. (Amended.) A wiring board comprising:

an insulate base material;

a conductor pattern[s] formed thereon; and

a magnetic thin film[s] formed on said conductor pattern, said magnetic thin film being made of a magnetic loss material having a maximum value of μ''_{max} of loss factor μ'' that is the imaginary component in the complex permeability characteristic of said magnetic loss material, said maximum value $\mu''max$ existing within a frequency range of 100 MHz to 10 GHz.

8. (Amended.) The wiring board according to claim 1, wherein said [magnetic thin film is configured of a] magnetic loss material [having] is a composition represented by M-X-Y, where M is at least one of Fe, Co, and Ni, X is at least one element other than M or Y, and Y is at least one of F, N, and O, and

said magnetic loss material [is a narrow-band magnetic loss material in which a maximum value μ''_{max} of loss factor μ'' that is imaginary component in complex permeability characteristic of said magnetic loss material exists within a frequency range of 100MHz to 10GHz, and] has a relative bandwidth bwr that is not greater than 200% where the relative bandwidth bwr is obtained by extracting a frequency bandwidth between two frequencies at which the value of μ'' is 50% of the maximum μ''_{max} and normalizing the frequency bandwidth at the center frequency thereof.

19. (Amended.) A wiring board comprising:

a board comprising [of] at least one insulative layer [comprising a] and at least one conductor part; and

a magnetic thin film[s] [deployed] disposed on at least [on] one part of said board [or said conductor part], said magnetic thin film being made of a magnetic loss material having maximum value μ''_{max} of loss factor μ'' that is an imaginary component in the complex permeability of said magnetic loss material, said maximum value μ''_{max} existing within a frequency range of 100 MHz to 10 GHz.

29. (Amended.) The wiring board according to claim 22, wherein said [magnetic thin film is the magnetic material configured of a] magnetic loss material is a composition represented by M-X-Y, where M is at least one of Fe, Co, and Ni, Y is at least one of F, N, and O, and X is at least one element other than M or Y, and wherein said [magnetic thin film is a] magnetic loss material has [maximum value μ''_{max} of loss factor μ'' that is imaginary component in complex permeability of said magnetic loss material exists within a frequency range of 100 MHz to 10 GHz, and] a relative bandwidth bwr that is not smaller than 150% where the relative bandwidth bwr is obtained by extracting a frequency bandwidth between two frequencies at which the value of μ'' is 50% of the maximum μ''_{max} and normalizing the frequency bandwidth at the center frequency thereof.